Techtalk:
Keeping Up With Technology

By David C. Caverly and Lucy MacDonald

A theme for this year's Techtalk is keeping up with technology, emphasizing both professional development and new technology. This first column will look at the *how* and *why* of professional development. A second column will highlight the *what*: specifically, wireless technology.

Boylan (1995) estimated that over 100,000 developmental education and learning assistance professionals served over 3 million students, although less than 15% subscribed to professional journals or belonged to professional organizations and less than 2% attended state or national conferences. Considering this reality, the National Association for Developmental Education's Executive Board (NADE, 2001) resolved that developmental educators should regularly engage in professional development. Similar recommendations were also made by most of the professional organizations in our field. Missing from these recommendations, however, were specific guidelines for professional development in technology. Here, we will propose standards, levels, and resources for professional development in technology integration for developmental educators.

Dimensions

There are three dimensions for professional development in technology integration. One dimension provides a checklist of standards developmental educators should acquire in technology integration. A second defines proficiency levels within these standards. A third lays out resources to develop the other two dimensions.

Technology Standards

In an effort to identify best practices and standards, the International Society for Technology in Education (ISTE) established a set of National Education Technology Standards (NETS) for K-12 teachers (ISTE, 2004a). A separate, although analogous, set was developed for K-12 administrators (ISTE, 2004b). These standards are appropriate for developmental education if adapted to the unique instructional environments in which we serve students.

Instructor checklist. ISTE (2004a) identified six categories of technology skills and abilities for teachers. In this column, we list adapted standards; more details on each standard can be found at the *Developmental Education Technology Standards* Web site (Caverly & MacDonald, 2004). We propose that developmental educators should be able to: (a) **demonstrate** a sound understanding of technology operations and concepts; (b) **plan** and **design** learning environments and experiences supported by technology; (c) **implement** curriculum plans, which include methods and strategies for applying technology to maximize student learning; (d) **apply** technology to facilitate a variety of effective assessment and evaluations; (e) **use** technology to enhance their own productivity and professional practice; and (f) **understand** the social, ethical, legal, and human issues surrounding the use of technology in higher education in order to apply those principles in practice. These standards present technology as neither the content of instruction nor the delivery of instruction. Instead, they advocate the use of technology as a tool to supplement instruction (Caverly & Peterson, 2000).

Administrator checklist. Technology standards would also apply to developmental education administrators. Again, we have adapted the ISTE (2004b) administrator standards for specific applications to developmental education, and we explicate each standard at the same Web site (Caverly & MacDonald, 2004). We propose developmental education leaders should: (a) **inspire** a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision; (b) **ensure** that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching; (c) **apply** technology to enhance their professional practice and to increase their own productivity and that of others; (d) **ensure** the integration of technology to support productive systems for learning and administration; (e) **use** technology to plan and implement comprehensive systems of effective assessment and evaluation; and (f) **understand** the social, legal, and ethical issues related to technology and model responsible decision-making related to these issues.

Both these sets of standards provide useful goals as to what developmental educators and administrators need to know. Still, another dimension needs to consider what level of proficiency these professionals have reached.

Developmental Levels of Technology Expertise

In an effort to move beyond a simple checklist of technology skills, Apple Computer (2003) designed a continuum of technology integration. This continuum provides a means to evaluate oneself regarding how one thinks about and acts when integrating technology. Simply, it outlines a series of developmental levels in technology integration: (a) **adoption,** where technology supports traditional practice; (b) **adaptation,** where technology integration enhances practice; (c) **appropriation**, where technology integration changes practice**;** and (d) **innovation**, where new practices are developed due to technology. This development allows for a means to progress either within the standard or from standard to standard.

As the PT^3 (2004) project—designed to educate public school teachers in the integration of technology—has found, faculty development involves more than just software training. Consequently, professionals need to consider the third dimension of technology growth: opportunities for professional development.

Professional Development Opportunities

Professional development in technology has the best success when provided outside one's normal responsibilities and duties, allowing attention to be focused on learning technology integration (Morrison & Brown, 2004). Toward this end, the Technology Institute for Developmental Educators (TIDE, 2004) provides a week-long institute each summer where participants develop these standards and grow through the continuum of development. For example, last summer an adoption level participant brought ideas for a course Web page and she learned to create one, whereas an appropriation level participant was able to edit video for a conference presentation.

Another avenue is to attend sessions on technology at state and national conferences. These meetings often provide hands-on workshops specifically for developmental educators. Check the Learning Support Centers in Higher Education Web site's calendar (Christ, 2004) for upcoming workshops at state and national developmental education conferences. Also, check the Web sites of major national organizations (COE, 2004; CRLA, 2004; NADE, 2004; NCLCA, 2004; NTA, 2004) and their representative state chapters. Join the special interest groups on technology at these national organizations to keep informed. For those who would rather develop skills on their own, tutorials are available at a variety of sites to teach the software (cf., Caverly, 2004).

These free online tutorials in either Macintosh or PC platforms teach most software from word processing to creating Web pages. Often, many institutions offer technology workshops as well. Still, to truly understand, we would encourage discussing technology integration with peers or on LRNASST (Christ, 2004).

Conclusion

One of the most important aspects of keeping up with technology is that it causes us to be developmental learners, struggling to learn new concepts and processes. Reflecting on that process is good for us as developmental educators because it will help us in our careers. Growing intellectually is better for our institutions and our programs. Most of all, professional development enhances learning for our students.

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